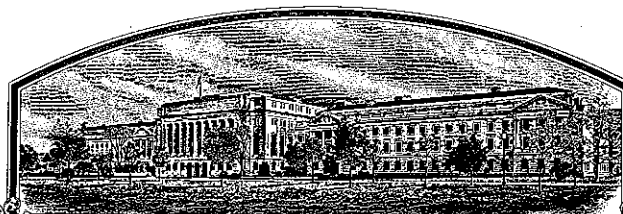


No.

9600261



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**ADSH Research Foundation**

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE IDENTIFIED BY THE VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF SEEDS SPECIFIED BY THE OWNER OF THE RIGHTS, (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

**WHEAT, COMMON**

**'Trenton'**

*In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirtieth day of July in the year of our Lord one thousand nine hundred and ninety-nine.*

Attest:

*An. nareywe*

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*Don Dickinson*  
Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE

# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a).

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER		3. VARIETY NAME	
NDSU Research Foundation		ND673		Trenton	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)		5. TELEPHONE (include area code)		FOR OFFICIAL USE ONLY PVPO NUMBER 9600261 DATE MAY 23, 1996 FILING AND EXAMINATION FEE \$2450.00 DATE 5-23-96 CERTIFICATION FEE \$300.00 DATE 6/17/1999	
c/o Executive Director PO Box 5014 Fargo ND 58105-5014		701-231-8931			
6. FAX (include area code)		7. GENUS AND SPECIES NAME			
701-231-1013		Triticum aestivum L.			
8. FAMILY NAME (Botanical)		9. CROP KIND NAME (Common name)			
Gramineae		Hard red spring wheat			
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name)		11. IF INCORPORATED, GIVE STATE OF INCORPORATION			
501(c) (3) Corporation - NDSU Research Foundation		North Dakota			
12. DATE OF INCORPORATION		13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS			
		Richard C. Frohberg Department of Plant Sciences North Dakota State University PO Box 5051 Fargo ND 58105-5051			
		Dale Zetocha Executive Director NDSU Research Foundation PO Box 5014 Fargo ND 58105-5014			
14. TELEPHONE (include area code)		15. FAX (include area code)			
701-231-8143		701-231-8474			
16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)					
<input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Applicant's Ownership <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository) <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to PVPO)					
17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act?)					
<input checked="" type="checkbox"/> YES (If "yes," answer items 18 and 19 below) <input type="checkbox"/> NO (If "no," go to item 20)					
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?			19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?		
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			<input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED		
20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?					
<input checked="" type="checkbox"/> YES (If "yes," give names of countries and dates) <input type="checkbox"/> NO					
USA - Release dated June 30, 1995					
21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.					
The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.					
Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF APPLICANT (Owner(s))			SIGNATURE OF APPLICANT (Owner(s))		
Dale Zetocha					
NAME (Please print or type)			NAME (Please print or type)		
Dale Zetocha					
CAPACITY OR TITLE		DATE	CAPACITY OR TITLE		DATE
Executive Director		5/22/96			
NDSU Research Foundation					

# EXHIBIT A - ORIGIN AND BREEDING HISTORY 'TRENTON' WHEAT

Spring 1985	Original cross made at North Dakota State University (NDSU) greenhouse. Pedigree - Grandin/Stoa sib
Summer 1985	F <sub>1</sub> plants, NDSU greenhouse.
Winter 1985-86	F <sub>2</sub> plants, winter nursery - Weslaco, TX
Summer 1986	F <sub>3</sub> head row, NDSU research land.
Summer 1987	F <sub>4</sub> progeny plot, NDSU research land.
Summer 1988	F <sub>5</sub> head row (F <sub>4</sub> derived), NDSU research land.
Summer 1989	F <sub>6</sub> progeny plot, NDSU research land.
Summer 1990	F <sub>7</sub> preliminary yield trial, 3 locations, NDSU research land.
Summer 1991	F <sub>8</sub> elite yield trial, 4 locations, NDSU research land. Seed increase (68 lbs.) Prosper, ND.
Summer 1992	Seed increase (263 lbs.) Prosper, ND.
Summer 1992-1994	North Dakota HRS wheat variety trial, 7 locations each year. Uniform Regional HRS Wheat Nursery, about 20 locations each year, Upper Midwest, USA.  Experimental line designation - ND673.
Summer 1993-1994	Wheat Quality Council test. Seed increase in ND by NDSU Seedstocks Project
June 30, 1995	ND673 released as a named cultivar, 'Trenton'.

Observations indicate Trenton is uniform and stable within commercially acceptable limits for all traits as described in Exhibit C. Uniformity and stability of Trenton were observed 1989 - 1994 for six generations (F<sub>6</sub> - F<sub>11</sub>). Variants (taller plants, 5-12 cm) occurrence at a frequency of 6/10,000 and awnless plant variants at a frequency of 1/10,000.

Selection criteria for the breeding of Trenton wheat were highly heritable traits (i.e. plant height, maturity, disease resistance) in the early segregating generations, F<sub>2</sub> - F<sub>5</sub>. Beginning in the F<sub>6</sub> generation, selection criteria also included lodging resistance, shattering resistance, test weight, grain yield and bread making characters (grain protein, milling extractin, dough mixing, loaf volume, etc.). Data were obtained from multiple locations and over years to evaluate and identify the experimental line ND673 that was named Trenton. Overall, the selection criteria were a combination of traits used to identify a superior hard red spring

wheat genotype adapted to North Dakota wheat production, and a genotype having acceptable (compared to check cultivars) milling and bread making properties for domestic and export markets.

## EXHIBIT B - NOVELTY STATEMENT

To my knowledge 'Trenton' most nearly resembles 'Stoa'. Differences include but are not necessarily restricted to, the following:

1. Trenton is photoperiod insensitive (daylength neutral). Stoa is photoperiod sensitive.
2. Trenton has a 2- to 2= seedling infection type to the TNMH isolate of wheat stem rust (incited by *Puccinia graminis* f. sp. *tritici*). Stoa has a 0 type infection (Table 4).

In addition, Trenton has a 2= seedling infection type to the RPQQ isolate of wheat stem rust and a 2- to 2= type to the TNMH isolate. Butte 86 has a type 0 type infection to both isolates (Table 4).

Trenton has a 2- to 2= seedling infection type to the TNMH and TNMK isolates of wheat stem rust. Kulm has a 0 to 0; type infection to both isolates (Table 4).

## 'TRENTON' HRS WHEAT

Table 1. Mean grain yield of selected entries in the 1992-95 hard red spring wheat variety trial at North Dakota Agricultural Research Centers.

Cultivar	Dickinson†	Hettinger‡	Williston	North Central	Carrington			
					Dry- land	Irrig.	Langdon	Prosper§
— bu/A —								
<u>Conv. Ht.</u>								
Stoa	46.7	67.4	52.4	40.5	47.6	48.7	50.7	47.8
Butte 86	46.9	68.4	49.1	40.8	53.3	50.2	43.3	49.5
Amidon	53.5	67.3	54.0	41.1	44.0	43.1	46.8	43.4
Sharp	---	68.7	49.6	38.3	50.9	52.0	47.0	45.9
CDC Teal	43.8	59.4	51.0	40.0	48.8	47.1	48.5	45.2
AC Domain	37.6	---	46.8	36.9	50.4	48.3	50.6	46.2
Kulm	---	70.4	51.5	40.7	49.0	47.5	45.3	50.7
Trenton	50.7	74.1	54.0	40.4	49.0	49.6	47.5	54.7
<u>Semidwarf</u>								
2375	47.1	68.1	52.2	39.0	55.1	54.6	54.4	52.8
Gus	51.2	72.2	50.7	43.6	41.9	39.7	41.5	39.8
Grandin	50.4	66.7	53.2	42.8	51.0	44.4	44.9	43.7
Bergen	56.1	68.0	57.5	39.9	48.1	46.1	46.5	49.4
2370	44.5	67.7	51.7	39.2	53.1	48.2	53.4	45.6
2371	45.9	72.4	51.7	38.7	46.0	47.5	48.6	41.2
Dalen	55.2	68.9	54.3	43.3	48.6	47.1	42.7	41.0
Krona	---	74.5	61.9	42.1	52.3	48.3	44.6	36.6
Norm	---	70.7	52.7	43.5	51.8	50.4	45.5	38.4
Sonja	55.3	78.3	55.2	43.7	51.4	50.1	47.0	39.7

†1993 and 1995 yield data.

‡1992, 1993 and 1995 yield data.

§1992, 1994 and 1995 yield data.

Table 2. Summary of agronomic performance of selected entries in the 1992-95 hard red spring wheat variety trial at North Dakota Agricultural Research Centers.

Cultivar	Headed (30)‡	Height (30)	Lodging score (16)	Rust†		Leaf disease (23)	Shatt- ering (2)	Test weight (29)	Grain yield (27)
				Leaf (1)	Stem (1)				
	days	cm	0-9	%	%	%	%	lb/bu	bu/A
<u>Conv. Ht.</u>									
Stoa	62	96	2.0	5R	0	38	1	57.7	50.3
Butte 86	59	86	1.7	5MR	0	43	Tr	59.1	50.6
Amidon	62	93	2.1	5R	0	32	0	58.2	48.6
Sharp	59	86	2.1	tMR	0	39	Tr	60.3	50.3
CDC Teal	61	92	1.9	5R	0	28	Tr	58.9	48.6
Kulm	59	90	1.4	5MR	0	44	Tr	60.0	50.5
Trenton	61	97	1.9	5R	0	36	1	59.6	52.3
<u>Semidwarf</u>									
2375	60	83	1.7	10MR	0	42	1	59.5	53.6
Gus	62	86	1.5	5MR	0	32	Tr	57.4	46.7
Grandin	61	85	1.1	tMR	0	42	Tr	59.0	49.7
Bergen	62	78	0.5	5R	0	22	Tr	57.4	50.7
2370	60	82	0.9	tMR	0	39	Tr	58.6	50.9
2371	62	82	0.7	10MR	0	31	1	57.7	49.2
Dalen	60	77	0.9	5R	0	33	Tr	58.8	49.4
Krona	64	78	0.7	5R	0	27	Tr	56.3	51.6
Norm	63	82	0.6	5R	0	26	Tr	57.1	50.8
Sonja	62	75	0.8	5R	0	28	Tr	57.1	52.0

†Rust data - 1995 Prosper.

‡Number of tests each trait.

NORTH DAKOTA STATE UNIVERSITY  
 AGRICULTURAL EXPERIMENT STATION  
 DEPARTMENT OF CEREAL SCIENCE AND FOOD TECHNOLOGY  
 ANALYTICAL, MILLING AND BAKING DATA  
 FIELD PLOT VARIETIES  
 (3 YEAR AVERAGE, 19 LOCATIONS)  
 1992, 1993 AND 1994  
 TABLE 3

AVERAGES OF 3 YEARS  
 FARINOGRAM  
 3 HOUR FERMENTATION

VARIETY OR NUMBER	YLD BPA	TEST WT	KER LB/BU	WHT		PROTEIN		FLR EXT	WET GLU	FLR ASH	PEAK MIX		ABS %	MIX		VOL CC	G-T	CB CL	CT CL	SYM		
				VIT FAL	NO SEC	WHT %	FLR %				TIME MIN	TOL MIN		MTI BU	CLASS						MIN	DO
AMIDON	ND	59.8	85	395	14.1	13.4	68.8	41.0	0.40		8.9	13.4	33	5.5	64.9	1.75	9.6	853	7.9	8.0	10.0	9.3
BERGEN	ND	59.2	59	408	13.3	12.5	71.1	37.0	0.42		9.8	11.6	28	5.4	64.8	1.65	9.2	843	7.9	7.9	10.0	9.3
BUTTE 86	ND	59.7	80	411	14.5	13.5	68.1	40.9	0.41		10.2	12.7	28	5.5	67.1	1.70	9.8	889	8.1	8.3	10.0	9.7
DALEN	ND	60.4	73	420	14.1	12.9	68.2	38.9	0.42		9.5	14.1	24	6.0	66.3	1.85	9.7	845	7.6	7.5	10.0	9.4
GRANDIN	ND	60.0	79	400	14.4	13.6	69.7	38.9	0.42		11.1	17.8	21	6.2	65.8	2.10	9.7	865	8.0	8.1	10.0	9.5
KULM	ND	61.0	77	406	14.6	13.8	68.9	41.9	0.38		11.3	16.6	22	6.4	65.3	1.70	9.6	919	8.0	8.7	10.0	9.7
LEN	ND	58.3	77	399	14.6	13.8	68.8	38.7	0.43		12.5	21.5	17	6.9	64.5	2.45	10.0	900	7.9	7.6	10.0	9.8
ND 674	ND	60.9	88	418	15.2	14.4	68.3	40.0	0.41		20.0	20.6	19	7.2	66.1	2.60	9.9	949	8.2	8.3	10.0	9.8
ND 678	ND	61.2	89	359	14.2	13.1	66.8	39.4	0.38		9.9	13.7	26	5.8	66.8	1.70	9.3	881	8.1	8.7	10.0	9.7
SHARP	ND	61.1	71	401	14.3	13.4	68.7	42.0	0.36		9.3	12.5	31	5.4	64.9	1.55	9.8	852	7.8	8.5	10.0	9.2
SONJA	ND	59.0	73	389	13.8	12.9	70.1	37.1	0.42		12.9	13.5	28	6.0	64.7	2.00	9.4	908	8.2	8.4	10.0	9.9
STOA	ND	58.7	86	398	14.6	13.8	68.1	40.5	0.39		12.4	18.8	21	6.7	63.9	1.95	9.8	866	7.8	8.3	10.0	9.5
TRENTON	ND	60.7	82	399	14.1	13.3	69.4	37.9	0.40		16.4	19.8	18	7.0	65.0	2.40	9.9	881	8.1	8.4	10.0	9.6
2371	ND	58.7	80	364	14.3	13.6	69.8	40.5	0.42		9.9	14.2	27	5.6	64.8	1.85	9.5	888	7.7	8.2	10.0	9.6
2375	ND	60.3	74	428	14.0	13.1	68.9	39.4	0.41		9.9	16.0	27	5.8	65.4	1.65	9.5	846	7.9	8.2	10.0	9.4
2398	ND	59.3	60	371	13.4	12.8	69.8	36.0	0.46		12.6	16.2	25	6.5	63.1	2.05	9.6	874	8.0	8.6	10.0	9.4

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Table 4. Seedling infection type of wheat genotypes, 'Trenton', 'Stoa', 'Butte 86' and 'Kulm', to certain isolates of wheat stem rust (incited by *Puccinia graminis* f. sp. *tritici*).

Wheat genotype	Wheat stem rust isolate					
	TNMH		RPOQ		TNMK	
	1992	1993	1993	1994	1992	1993
Stoa	0	0	---	;	0	0
Butte 86	0	0	0	0	0;	0
Kulm	0	0	0	--	0	0;
Trenton	2-	2=	2=	2=	2=	2=

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
COMMODITIES SCIENTIFIC SUPPORT DIVISION  
BELTSVILLE, MARYLAND 20705

EXHIBIT C  
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY  
WHEAT (TRITICUM SPP.)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)

NDSU Research Foundation

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

PO Box 5014

Fargo, ND 58105-5014

FOR OFFICIAL USE ONLY

PVPO NUMBER

9600261

VARIETY NAME OR TEMPORARY DESIGNATION

Place the appropriate number that describes the varietal character of this variety in the boxes below.  
Place a zero in first box (e.g., 089 or 09 ) when number is either 99 or less or 9 or less.

## 1. KIND:

1 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

## 2. TYPE:

1 1 = SPRING 2 = WINTER 3 = OTHER (Specify) 2 1 = SOFT 2 = HARD 3 = OTHER (Specify)

2 1 = WHITE 2 = RED 3 = OTHER (Specify)

## 3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:

056 FIRST FLOWERING 060 LAST FLOWERING

## 4. MATURITY (50% Flowering):

04 NO. OF DAYS EARLIER THAN 3 1 = ARTHUR 2 = SCOUT 3 = CHRIS  
 NO. OF DAYS LATER THAN  4 = LEMHI 5 = NUGAINES 6 = LEEDS

## 5. PLANT HEIGHT (From soil level to top of head):

097 CM. HIGH

CM. TALLER THAN

01 CM. SHORTER THAN 3 1 = ARTHUR 2 = SCOUT 3 = CHRIS  
4 = LEMHI 5 = NUGAINES 6 = LEEDS

## 6. PLANT COLOR AT BOOTING (See reverse):

3 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

## 7. ANTHUR COLOR:

1 1 = YELLOW 2 = PURPLE

## 8. STEM:

1 Anthocyanin: 1 = ABSENT 2 = PRESENT

2 Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT

04 NO. OF NODES (Originating from node above ground)

1 Waxy bloom: 1 = ABSENT 2 = PRESENT

1 Internodes: 1 = HOLLOW 2 = SOLID

23 CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

## 9. AURICLES:

1 Anthocyanin: 1 = ABSENT 2 = PRESENT

1 Hairiness: 1 = ABSENT 2 = PRESENT

## 10. LEAF:

2 Flag leaf at booting stage: 1 = ERECT 2 = RECURVED  
3 = OTHER (Specify):

2 Flag leaf: 1 = NOT TWISTED 2 = TWISTED

1 Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT

2 Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT

12 MM. LEAF WIDTH (First leaf below flag leaf)

22 CM. LEAF LENGTH (First leaf below flag leaf):

## 11. HEAD:

☒ Density: 1 = LAX 2 = DENSE☒ Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE  
4 = OTHER (Specify) \_\_\_\_\_☒ Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNEO☒ Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED  
5 = BROWN 6 = BLACK 7 = OTHER (Specify): \_\_\_\_\_☒ 08 CM. LENGTH.☒ 11 MM. WIDTH

## 12. GLUMES AT MATURITY:

☒ Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.)  
3 = LONG (CA. 9 mm.)☒ Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.)  
3 = WIDE (CA. 4 mm.)☒ Shoulder 1 = WANTING 2 = OBLIQUE 3 = ROUNDED  
shape: 4 = SQUARE 5 = ELEVATED 6 = APICULATE☒ Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

## 13. COLEOPTILE COLOR:

☒ 1 = WHITE 2 = RED 3 = PURPLE

## 14. SEEDLING ANTHOCYANIN:

☒ 1 = ABSENT 2 = PRESENT

## 15. JUVENILE PLANT GROWTH HABIT:

☒ 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

## 16. SEED:

☒ Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL☒ Check: 1 = ROUNDED 2 = ANGULAR☒ Brush: 1 = SHORT 2 = MEDIUM 3 = LONG☒ Brush: 1 = NOT COLLARED 2 = COLLARED☒ Phenol reaction 1 = IVORY 2 = FAWN 3 = LT. BROWN  
(See instructions): 4 = BROWN 5 = BLACK☒ Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) \_\_\_\_\_☒ 05 MM. LENGTH☒ 03 MM. WIDTH☒ 34 GM. PER 1000 SEEDS

## 17. SEED CREASE:

☒ Width: 1 = 60% OR LESS OF KERNEL 'WINOKA'  
2 = 80% OR LESS OF KERNEL 'CHRIS'  
3 = NEARLY AS WIDE AS KERNEL 'LEMHI'☒ Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT'  
2 = 35% OR LESS OF KERNEL 'CHRIS'  
3 = 50% OR LESS OF KERNEL 'LEMHI'

## 18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☒ STEM RUST (Races) QFBS QSHS  
RPQR RTQQ☒ LEAF RUST (Races) Local☐ STRIPE RUST (Races) \_\_\_\_\_☐ LOOSE SMUT☐ POWDERY MILDEW RKQS TNMK☐ BUNT☐ OTHER (Specify) \_\_\_\_\_

## 19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☒ SAWFLY☐ APHID (Bydv.)☐ GREEN BUG☐ CEREAL LEAF BEETLE☐ OTHER (Specify) \_\_\_\_\_HESSIAN FLY  
RACES:☐ GP☐ A☐ B☐ C☐ D☐ E☐ F☐ G

## 20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	<u>Stoa</u>	Seed size	<u>Grandin</u>
Leaf size	<u>Stoa</u>	Seed shape	<u>Grandin</u>
Leaf color	<u>Stoa</u>	Coleoptile elongation	<u>Stoa</u>
Leaf carriage	<u>Stoa</u>	Seedling pigmentation	<u>Stoa</u>

## INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggie and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

## EXHIBIT D - ADDITIONAL DESCRIPTION OF VARIETY

When 'Trenton' is compared to 'Amidon', 'Ernest' and 'Glupro', it is photoperiod insensitive (daylength neutral). Amidon, Ernest and Glupro are photoperiod sensitive. Trenton is a conventional height genotype, 'Grandin' is a semidwarf genotype.

## EXHIBIT E - STATEMENT OF THE BASIS OF THE APPLICANT'S OWNERSHIP

Dr. Richard C. Frohberg, an employee of the North Dakota Agricultural Experiment Station and North Dakota State University, is a plant breeder who developed 'Trenton' the hard red spring wheat cultivar for which Plant Variety Protection is hereby sought. The employee by agreement and because of the condition of the use of facilities and funds of the North Dakota Agricultural Experiment Station and North Dakota State University has assigned all ownership rights to 'Trenton' hard red spring wheat to the North Dakota Agricultural Experiment Station and North Dakota State University.

North Dakota State University on behalf of the North Dakota Agricultural Experiment Station has assigned all ownership to the NDSU Research Foundation. The NDSU Research Foundation is a nonprofit corporation set up to own and manage the intellectual property of the North Dakota State University.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)  NDSU RESEARCH FOUNDATION	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER  ND673	3. VARIETY NAME  Trenton
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) c/o Executive Director P.O. Box 5014 Fargo, ND 58105-5014	5. TELEPHONE (include area code) 701-231-8931	6. FAX (include area code) 701-231-1013
7. PVPO NUMBER		
8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		

9. Is the applicant (individual or company) a U.S. national or U.S. based company? ☒ YES ☐ NO  
If no, give name of country10. Is the applicant the original owner? ☐ YES ☒ NO If no, please answer one of the following:

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

☒ YES ☐ NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

☒ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (if needed, use reverse for extra space):

See reverse - Statement of the basis of the applicant's ownership.

**PLEASE NOTE:**

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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STD-470-E (07-97) (Destroy previous editions).

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Exhibit E Item 11.

Statement of the Basis of the Applicant's Ownership

Dr. Richard C. Frohberg, an employee of the North Dakota Agricultural Experiment Station and North Dakota State University, is a plant breeder who developed 'Trenton' the hard red spring wheat cultivar for which Plant Variety Protection is hereby sought. The employee by agreement and because of the condition of the use of facilities and funds of the North Dakota Agricultural Experiment Station and North Dakota State University has assigned all ownership rights to 'Trenton' hard red spring wheat to the North Dakota Agricultural Experiment Station and North Dakota State University.

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